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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of : RONALD A. SCHACHAR

U.S. Serial No. : 09/556,143

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Examiner : David M. Shay

Group Art Unit : 3739

Title : SEGMENTED SCLERAL BAND FOR TREATMENT OF PRESBYOPIA AND OTHER EYE DISORDERS

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Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**PETITION UNDER 37 C.F.R. § 1.181**

Pursuant to 37 C.F.R. § 1.181, Applicant respectfully requests that the Commissioner exercise his supervisory authority and order withdrawal of the pending new matter rejection.

This application is a continuation application amended after filing to explicitly set forth subject matter that had been incorporated by reference in the parent application. The additional language and figures have been rejected as new matter by the Examiner in an Office Action dated

\*March 24, 2003 (Paper No. 15), which states:

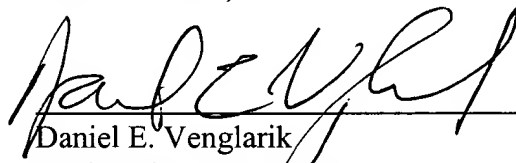
The added material which is not supported by the original disclosure is as follows: the description of Figures 10, 11; the disclosure running from line 21 on page 22 through the end of page 25 of substitute specification; and newly submitted Figures 10 and 11.

Paper No. 15, page 2. However, the bulk of the added text finds literal support in U.S. Patent No.

5,354,331, which is incorporated by reference at page 9, lines 3–5 of the original specification as filed. The text bridging page 22, line 21 to page 25, line 23 of the substitute specification is set forth in the left hand column in the attachment hereto. The corresponding text from US 5,354,331 is set forth in the center column, and the location of that text within US 5,354,331 is set forth in the right column. As can be seen, the majority of the content objected to as “new matter” is merely a restatement of content from US 5,354,331, and is therefore NOT new matter. MPEP § 2163.07, p. 2100-177 (8<sup>th</sup> ed. Rev. 1 February 2003). The remainder of the added text, as well as Figures 10–11, are merely a description and depiction of the inherent structure and operation of lasers, referenced repeatedly in US 5,354,331, and therefore also does NOT constitute new matter. MPEP § 2163.07(a). Accordingly, Applicants respectfully request that the Examiner be ordered to withdraw the new matter rejection.

Respectfully submitted,

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FIGURE 10 shows a diagram of an exemplary laser 1000 of the type capable of treating various eye diseases in accordance with the principles of the present invention. Such eye diseases include presbyopia, hyperopia, primary open angle glaucoma, and ocular hypertension.

This invention relates to methods of treating column 1, presbyopia, hyperopia, primary open angle glaucoma and lines 7-12 ocular hypertension and more particularly to methods of treating these diseases by increasing the effective working distance of the ciliary muscle.

Laser 1000 may be any suitably arranged laser, for instance, any of a carbon dioxide laser, a helium-neon laser, a helium-cadmium laser, an argon ion laser, a krypton ion laser, a xenon laser, a nitrous oxide laser, an iodine laser, a holmium doped yttrium-aluminum garnet (YAG) laser, an excimer laser, a chemical laser, a harmonically oscillated laser, a dye laser, a nitrogen laser, a neodymium laser, an erbium laser, a ruby laser, a titanium-sapphire laser and a diode laser.

Suitable lasers include those conventionally used in ocular column 8, surgery such as carbon dioxide lasers, helium-neon lasers, lines 29-38 helium-cadmium lasers, argon ion lasers, krypton ion lasers, xenon lasers, nitrous oxide lasers, iodine lasers, holmium doped yttrium-aluminum garnet (YAG) lasers, excimer lasers, chemical lasers, harmonically oscillated lasers, dye lasers, nitrogen lasers, neodymium lasers, erbium lasers, ruby lasers, titanium-sapphire lasers, diode lasers and the like.

Laser 1000 is operable to weaken the sclera of an eye in the region of the ciliary body to thereby increase the effective working distance of the ciliary muscle of the eye and increase the amplitude of accommodation of the eye, all in accordance with the principles of the present invention.

This thinning can be accomplished by paring or by abrading column 8, the surface or by ablating the surface with laser irradiation. lines 7-10 The invention also relates to increasing the amplitude of column 1, accommodation of the eye by increasing the effective lines 12-15 working range of the ciliary muscle.

Exemplary laser 1000 illustratively includes a power supply 1010, laser beam generator 1020 and a controller 1030. Exemplary power supply 1010 supplies power to laser 1000. Exemplary laser beam generator 1020 is operable to generate a narrow coherent beam of radiation. Exemplary controller 1030 is operable to control the intensity of the laser beam generated.

The laser beam may be one of ionizing radiation or non-ionizing radiation.

Any irradiative treatment with ionizing or column 8, non-ionizing radiation that weakens the sclera may be used. lines 38-40

Laser 1000 is operable to weaken the sclera of the eye in the region of the ciliary body, for instance, by (i) abrading the sclera with laser irradiation, (ii) ablating the sclera with laser irradiation, (iii) incising the sclera with laser irradiation, (iv) incising the sclera at select angles with laser irradiation, and (v) decomposing partially collagen fibers in the sclera.

Alternatively, the sclera in the region of the ciliary column 8, body may be weakened by surgical means. The sclera may be thinned or weakened by the surgical removal of a portion of its collagenous substance, as, for example by ablating a portion of the thickness of the sclera. This thinning can be accomplished by paring or by abrading the surface or by ablating the surface with laser irradiation. The sclera can also be weakened by incisions carefully placed at appropriate angles in the region overlying the ciliary body. . . . Alternatively the sclera in the region overlying the ciliary body can be weakened by irradiation with a laser beam to decompose partially the collagen fibers.

Exemplary laser 1000 is illustrated with three stages. Exemplary stage 1: in a laser, energy is stored in a "lasing" medium, which may be a solid, liquid or gas; the energy excites atoms in the medium, raising them to a high-energy state such that an excited atom releases a light ray (here, electrons in an electric current excite the gas atoms). Exemplary Stage 2: a ray of light from the excited atom strikes another excited atom, causing it also to emit a light ray; these light rays strike more excited atoms, and the process of light production grows, such that mirrors at the ends of the tube reflect the light rays so that more and more excited atoms release light. Exemplary Stage 3: as each excited atom emits a light ray, the new ray vibrates in step